USER MANUAL

SAILOR®

SAILOR 100 Satellite TV

Thrane & Thrane

SAILOR 100 Satellite TV

User Manual

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Safety summary

The following general safety precautions must be observed during all phases of operation, service and repair of this equipment. Failure to comply with these precautions or with specific warnings elsewhere in this manual violates safety standards of design, manufacture and intended use of the equipment. Thrane & Thrane assumes no liability for the customer's failure to comply with these requirements.

DO NOT OPERATE IN AN EXPLOSIVE ATMOSPHERE
Do not operate the equipment in the presence of flammable gases or fumes. Operation of any electrical equipment in such an environment constitutes a definite safety hazard.

KEEP AWAY FROM LIVE CIRCUITS
Operating personnel must not remove equipment covers. Component replacement and internal adjustment must be made by qualified maintenance personnel.

DO NOT SUBSTITUTE PARTS OR MODIFY EQUIPMENT
Because of the danger of introducing additional hazards, do not substitute parts or perform any unauthorized modification to the equipment.

Failure to comply with the rules above will void the warranty!

About the manual

Intended readers

This manual is a user manual for the SAILOR 100 Satellite TV system. This manual is intended for anyone who is using or intends to use this system. No specific skills are required to operate the SAILOR 100 Satellite TV. However, it is important that you operate the system according to the guidelines in this manual.

Manual overview

Note that this manual does not cover installation of the system. For information on installation refer to the SAILOR 100 Satellite TV Installation manual. Part numbers for related manuals are listed in the next section.

This manual has the following chapters:

- ***Introduction*** contains a brief description of the system.
- ***Operation*** explains how to start up and use the system.
- ***Troubleshooting*** contains a short troubleshooting guide and information on service and repair.

Related documents

The below list shows the documents related to this manual and to the SAILOR 100 Satellite TV system.

Title and description	Document number
SAILOR 100 Satellite TV Installation manual	98-136280
Control Panel Installation manual (TT-6006A and TT-6007A Message Terminal)	98-130088
SAILOR Transmodulator Installation manual	98-136455

Typography

In this manual, typography is used as indicated below:

Bold is used for the following purposes:

- To emphasize words.
  Example: “Do **not** touch the antenna”.
- To indicate what the user should select in the user interface.
  Example: “Select **SETTINGS** > **LAN**”.

Italic is used to emphasize the paragraph title in cross-references.

Example: “For further information, see *Connecting Cables* on page...”.

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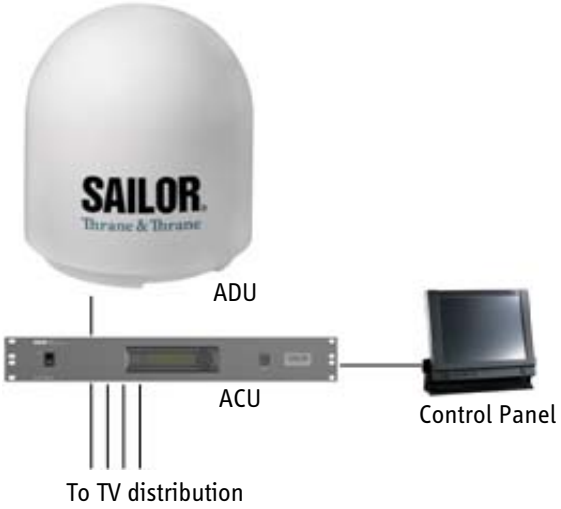
Introduction

SAILOR 100 Satellite TV

The SAILOR 100 Satellite TV is a maritime satellite TV antenna for high-quality worldwide TV reception. It consists of the following units:

- Above Deck Unit (ADU)
- Antenna Control Unit (ACU)
- Control Panel



A Multiswitch or a SAILOR Transmodulator can be connected for TV distribution.

During installation all setup tasks are taken care of. The system is easy to use. You only have to select a new satellite profile if you wish to watch channels on a different satellite or you do not have coverage from the currently selected satellite. If necessary you can add further satellite profiles to the list that has been created during installation.

User interfaces

Control Panel for handling satellite profiles

The user interface of the SAILOR 100 Satellite TV is the Control Panel. It has a touch screen. You can tap through settings and menus to handle satellite profiles, show status information and system messages. The following screen shows the Dashboard.

ACU display for status and system parameters

You can view status and system parameters in the display of the ACU.

Operation

The SAILOR 100 Satellite TV has the following user interfaces:

- *Control Panel*
- *Keypad and menus of the ACU*

There is also a web interface for installation and advanced setup. For further details see the *SAILOR 100 Satellite TV Installation manual*.

Control Panel

The following sections describe how to set up and use the SAILOR 100 Satellite TV using the Control Panel:

- *Getting started*
- *Creating or editing a profile*
- *Selecting the active profile*
- *Deleting a profile*
- *Event list*

Getting started

Use the Control Panel for handling and selecting satellite profiles. The unit is equipped with a touch screen, an external keyboard is not required.

Note When reading status information in this application, read carefully whether it is the status information of the ACU or the Satellite TV application on the Control Panel.

Navigation and start-up

To navigate through the user interface you have the following possibilities:

- **Icon in the top right corner** to display the main menu.
- **Arrow icon** (lower left corner) for back function and to collapse the on-screen keyboard when you do not need it any more.

To get started with the Control Panel, do as follows:

1. Make sure that it is connected to the LAN port 4 at the rear of the ACU, possibly through a switched network.

   Note | If connected directly to the ACU, make sure that the DHCP server has been enabled on that port.

   For details on ACU network configuration see the *SAILOR 100 Satellite TV Installation manual*.

2. Press the on/off button. A couple of start-up screens are displayed. Wait until the **Dashboard** is displayed:

   - **ACU connection: OK**
   - **System:** status information, e.g. **TRACKING.** When a yellow triangle is displayed in the section **ACU Connection** the ACU is not ready for operation.

3. The **Dim** button is used to dim the light in the Control Panel. Push and hold to dim the display more/less. Each new push changes direction between more and less.

Now you can create satellite profiles.

Creating or editing a profile

To create or edit a profile, i.e. satellite profile, do as follows:

1. Tap the menu icon .
2. Select **Settings**.
3. Select **Create profile** or **Edit profile**.

4. Fill in or edit the satellite profile name.

Note It is helpful to assign a name containing the location where the Satellite profile is to be used (e.g. "Gulf of Mexico" or "North Sea") and possibly the provider.

5. Tap the field **Satellite**. A new window is displayed. Tap and scroll to find the wanted satellite, then tap on a satellite to select it. The list is sorted as follows: 180°W -> 0° -> 180°E.

Profile handling	Default satellite in the list
Create new profile	The satellite closest to the ship's position is highlighted.
Edit profile	The satellite currently selected for this profile is highlighted.

Note At some longitudes, multiple satellites are co-located. In this case, it is not important which is chosen as long as the longitude is correct. The chosen satellite will be the one the system tracks, but it will receive and forward the TV signals from all the co-located satellites.

6. Configure the tracking properties.

   Automatic:

   The system will automatically determine which signal to track on, based on an automatic frequency and transponder scan of the satellite.

Note During frequency and transponder scan, TV reception is possible. Thus, Automatic tracking is not slower than manually configured tracking parameters.

If the vessel moves out of coverage of the transponder currently being tracked, the system will initiate a new frequency and transponder scan and find another transponder to track, on the same satellite (assuming the vessel is still in coverage of the satellite).

- Polarisation: Select Linear or Circular depending on the polarisation with which your provider transmits the TV signals[1].

Note Selecting Linear when the TV signal is transmitted with Circular polarisation, or vice versa, results in a 3 dB loss in signal strength. Hence, this setting cannot be verified by presence of TV signal alone.

1. For more information see e.g. www.lyngsat.com or www.satbeams.com. Linear signals are marked with the letter H for Horizontal or V for Vertical. Circular signals are marked with either L for Left hand or R for Right hand.

DVB-S / DVB-S2:

By selecting DVB-S / DVB-S2, it is possible to configure the system to track a specific transponder.

- Polarisation: Linear Horizontal, Linear Vertical, Circular Left hand or Circular Right hand.
- Tracking frequency: Frequency of the transponder (e.g. 11.362 GHz).
- Symbol rate: Mega symbols per second (e.g. 27.500 MS/s).

Note | It is highly recommended always to use Automatic tracking.

7. Tap **Save** to save the satellite profile.
8. An information window is displayed. Verify the data for the new profile and tap **OK** to close the window.

Selecting the active profile

To change the active profile, select another profile from the list of created profiles.

Note When you select another profile, the antenna moves to the new position and goes through the acquisition procedure. This may take a couple of minutes.

Do as follows:

1. Tap the menu icon .
2. Select **Activate profile**.
3. From the list of existing profiles select the new profile.

4. A confirmation window is displayed. Verify activation of the selected profile and tap **OK** to accept.
5. The **Dashboard** is displayed again and the new profile is selected. An azimuth adjustment is made (if enabled during installation), and the antenna turns to the new position and starts acquiring signal from the new satellite.

Deleting a profile

You can delete profiles that you don't use anymore. **You cannot delete the currently active profile**.

To delete a profile, do as follows:

1. Tap the menu icon .
2. Select **Settings**.
3. Select **Delete profile.**
4. Tap the profile you want to delete.
5. A confirmation window is displayed. Verify the profile name you want to delete and press **OK** to accept.

Event list

This list provides active events and history of the system. Notifications are earlier events, they are cleared after 24 hours.

There are two ways to display the **Event list**:

Tap the menu icon and tap **Event list**.

or

1. Tap the yellow triangle in the lower right corner of the Control Panel.

2. Tap **Active events**.

Help

Tap the menu icon and tap **Help**.

Help provides a description how to handle satellite profiles. Scroll through the help or use the links at the start to jump to a specific topic.

About

Tap the menu icon and tap **About**.

About provides the following information:

- Software version of the SAILOR 100 Satellite TV application. Software version of the ACU is shown on the **Dashboard** page in the section **Unit information**.
- IP address of the Control Panel
- Legal Notices with software licence information

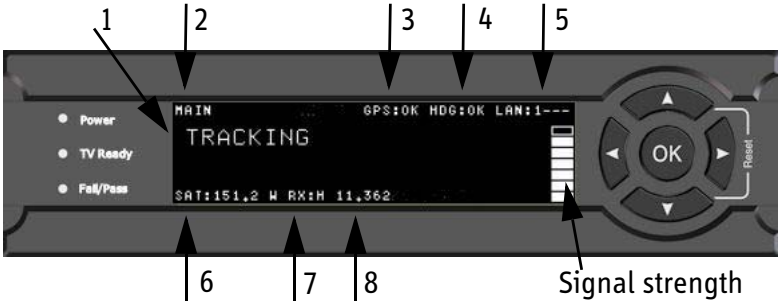
Keypad and menus of the ACU

The following sections describe how to use the keypad and view the menus of the SAILOR 100 Satellite TV:

- *ACU display and keypad*
- *Navigating the menus*
- *The menu tree*
- *Adjusting brightness of the display*
- *Resetting the system*

ACU display and keypad

In the ACU display you can see the current state of the system. You can also see events (warnings, errors and information) and how the system has been configured. Use the keypad to navigate through the menu tree.



1. Current status of the SAILOR 100 Satellite TV:
   NOT READY (Waiting for input from GNSS, e.g. GPS)
   READY (no satellite profile selected)
   POINTING ANTENNA (Locating the satellite)
   ACQUIRING SIGNAL (Acquiring the satellite signal)
   TRACKING (Tracks the current satellite)
   FREQUENCY SCAN (Scanning for transponders)
   BLOCKING ZONE (Antenna is pointing into a blocking zone)

2. Current menu. See *The menu tree* on page 14.
3. GPS: GPS signal is received from the GPS module, OK or –.
4. HDG: Ship heading data received from the ship's gyro, OK or –.
5. LAN: LAN connectors used, 1, 2, 3, 4, –.
6. SAT: Satellite position of currently active satellite profile.
7. RX: RX polarisation of currently active satellite profile. H (horizontal), V (vertical), L (left-hand) R (right-hand).
8. RX: Rx RF tracking frequency in GHz.

After 1 hour the display is dimmed to lowest intensity. Press any key to light up the display.

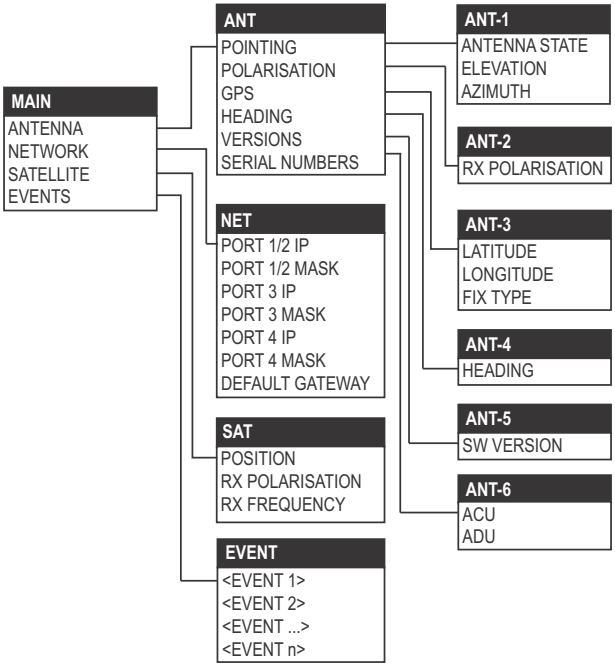
Navigating the menus

Use the keypad to navigate the menus.

- Press **OK** or ▶ to select a menu item.
- Use the arrow keys ▲ and ▼ to go through the menu items or enter a number, digit by digit.
- Use the arrow keys ◀ and ▶ to go through the settings and move from one digit to the next.
- Press **OK** to select a setting.
- Press ◀ again to move one level up. If applicable, confirm to store the new setting by pressing **OK**.

The menu tree

In the menu tree you can see how the system has been configured. You can also enter satellite information directly, if it is necessary to change the satellite information and you cannot use a connected PC and the web interface.



Top-level menu

Top-level menu	Description
MAIN	View with current status of the SAILOR 100 Satellite TV. This view is displayed after a time out of 10 minutes. Press any key (except left arrow) to enter the menu at **MAIN**. New events are shown in this display. If an event is displayed, press **OK** to jump directly to the menu **EVENTS** for viewing the currently active events.
ANTENNA	Shows the current ADU parameters, position, software version and serial numbers of the ADU and ACU.
NETWORK	Shows the IP addresses and netmasks of the LAN connectors of the ACU.
SATELLITE	Current satellite information. This information is selected using the web interface or the Control Panel.
EVENTS	View system events. Active events are shown as: X ACTIVE EVENTS in the **MAIN** display. Press **OK** to update the list.

Menu descriptions

ANTENNA menu	Description
POINTING	ANTENNA: Current state of the antenna ELEVATION: Current elevation angle of the antenna AZIMUTH: Current azimuth of the antenna, with reference to North
POLARISATION	RX POLARISATION: Setting of polariser.

ANTENNA menu	Description
GPS	LATITUDE: current latitude, read from GPS module. LONGITUDE: current longitude, read from GPS module. FIX TYPE: 3D or NONE
HEADING	Ship's heading in degrees with reference to North, provided by the ship's gyro.
VERSIONS	Current software version.
SERIAL NUMBERS	ACU: ACU serial number ADU: Serial number of the antenna

NETWORK menu	Description
PORT 1/2 IP	Current IP address for LAN 1 and LAN 2.
MASK 1/2	Current netmask for LAN 1 and LAN 2.
PORT 3 IP	(LAN 3) Current IP address of the SAILOR 100 Satellite TV web interface (default: 192.168.0.1).
MASK 3	(LAN 3) Current netmask of the SAILOR 100 Satellite TV web interface (default: 255.255.255.0).
PORT 4 IP	Current IP address for LAN 4.
MASK 4	Current netmask for LAN 4.
DEFAULT GATEWAY	Current default gateway.

SATELLITE menu	Description
POSITION	Position of the current satellite.
RX POLARISATION	Linear polarisation: HORIZONTAL, VERTICAL Circular polarisation: LEFT HAND, RIGHT HAND.
RX FREQUENCY	Ku band receiving frequency of the active satellite.

EVENT menu	Description
<EVENT>	In this menu all active events are listed. Use ▼ and ▲ to go through the active events. Events can be of the type WARNING or ERROR. For a list of events see *Event messages – overview* on page 1. If a new event occurs or there is a change in the event list while you are in the EVENTS menu, a * is shown in the upper left corner of the display, next to the menu name. Press OK to update the EVENTS list, the * will be removed. A > means the event text is longer than the display. Press > to see the remaining text.

Example: **EVENT 1/4***: This is the first event out of a list of 4 and there has been a change in the list. EVENT 1/4 will always be shown, the * indicates that there has been a change.

Adjusting brightness of the display

To adjust the brightness do the following:

1. Press and hold **OK** for a short moment until BRIGHTNESS XXX% is displayed (XXX is the current brightness value).
2. Hold OK pressed + press ▲ for lighter or ▼ for darker display.
3. Release OK to leave the brightness menu.

Resetting the system

To reset the system do the following:

1. Press and hold ▲ and ▼ until the ACU display shuts down and the ACU reboots.

2. Wait until the system has rebooted and is operational again. The last active satellite profile will be used.

Troubleshooting

This chapter gives guidelines for troubleshooting and provides an overview of the different means of status signalling. It has the following sections:

- *LEDs on the ACU*
- *Troubleshooting guide*
- *Error messages*
- *Service and repair*

LEDs on the ACU

The ACU has 3 LEDs: Power, TV Ready and Fail/Pass LED.

LED	Behavior	Description
Power	Steady green	Power supply OK
	Steady red	Power supply failure
	Off	No power
TV Ready	Steady green	Tracking satellite.
	Off	Not tracking satellite.
Fail/Pass LED	Steady red	A fault which prevents operation is present in the system (ACU, ADU).
	Flashing green	A Power On Self Test (POST) or Person Activated Self Test (PAST) in progress. The current status is displayed.
	Flashing red	Active BITE (Built In Test Equipment) failure or warning. The event is shown in the ACU display.
	Steady green	No faults.

Troubleshooting guide

Error messages

Active errors are indicated by a yellow triangle on the Dashboard page of the Control Panel. To see further info see *Event list* on page 10.

Service and repair

Should your Thrane & Thrane product fail, please contact your dealer or installer, or the nearest Thrane & Thrane partner. You will find the partner details on thrane.com where you also find the Thrane & Thrane Self Service Center web-portal, which may help you solving the problem.

Your dealer, installer or Thrane & Thrane partner will assist you whether the need is user training, technical support, arranging on-site repair or sending the product for repair.

Your dealer, installer or Thrane & Thrane partner will also take care of any warranty issue.

Repacking for shipment

Should you need to send the product for repair, please read the below information before packing the product.

The shipping carton has been carefully designed to protect the SAILOR 100 Satellite TV and its accessories during shipment. This carton and its associated packing material should be used when repacking for shipment. Attach a tag indicating the type of service required, return address, part number and full serial number. Mark the carton FRAGILE to ensure careful handling.

Note | Correct shipment is the customer's own responsibility.

If the original shipping carton is not available, the following general instructions should be used for repacking with commercially available material.

1. Wrap the defective unit in heavy paper or plastic. Attach a tag indicating the type of service required, return address, part number and full serial number.
2. Use a strong shipping container, e.g. a double walled carton.
3. Protect the front- and rear panel with cardboard and insert a layer of shock-absorbing material between all surfaces of the equipment and the sides of the container.
4. Seal the shipping container securely.
5. Mark the shipping container FRAGILE to ensure careful handling.

Failure to do so may invalidate the warranty.

Conformity

SAILOR 100 Satellite TV

CE (LVD & EMC)

The Thrane SAILOR 100 Satellite TV is CE certified (LVD &EMC directives) as stated in the “Declaration of Conformity with LVD and EMC Directives”, enclosed in copy on the next page.

Thrane & Thrane A/S

Declaration of Conformity with LVD and EMC Directives

The undersigned of this letter declares that the following equipment complies with the specifications of EC directive 2006/95/EC concerning Low Voltage Safety and EC directive 2004/108/EC concerning EMC.

Equipment included in this declaration

TT-7390A SAILOR 100 Satellite TV

Consisting of:

TT-7300A SAILOR 100 Satellite TV, Antenna Control Unit	PN = 407300A-T19
TT-7309A SAILOR 100 Satellite TV, Above Deck Unit	PN = 407309A-THR
TT-6007A SAILOR 6007 Message Terminal Android	PN = 406007A-AND

Equipment Applicability

The TT-7390A SAILOR 100 Satellite TV is an antenna system used worldwide for receiving TV signals.

Declaration

The safety requirement with respect to the LVD directive 2006/95/EC is met by conforming to the harmonized EU standards EN 60950-1 and EN 60950-22. The protection requirement with respect to the EMC directive 2004/108/EC is met by conforming to the harmonized EU standards EN 60945.

Manufacturer

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Place and Date

Kgs. Lyngby, 20. September 2012

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Quality Management System
DS/EN ISO 9001
DNV Det Norske Veritas, Business Assurance, Denmark A/S

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